


RESPONSE
SN 09/489,293
PAGE - 3 of 7 -

cancelled from the claims(s)." The Examiner further indicated that the invention consists of an improvement of an old machine and that one or more views of the improved portion should be shown disconnected from the old structure. Applicants respectfully disagree. 

First, the journal bearing, the first thrust bearing, and the second thrust bearing are shown in Figure 2. The sleeve 112 has an axial surface 120 that faces a surface of the shaft 100. The axial surface 120 and the shaft 100 define a "journal bearing", which is clearly recognizable to one skilled in the art of hydrodynamic spindle motor design. (See Applicants' specification, page 4, line 32 through page 5, line 5). In addition, the thrust plate 116 includes a surface 122 that faces the sleeve 112, and a surface 124 that faces the counterplate 130. The surface 122 and the sleeve 112, as well as the surface 124 and the counterplate 130, define "thrust bearings" of the fluid dynamic type, which are clearly recognizable to one skilled in the art of hydrodynamic spindle motor design. (See Applicants' specification, page 5, lines 5-9). As such, Applicants contend that Figures 1 and 2 show every feature of claims 1-10 and, as such, fully satisfy the requirements of 37 C.F.R. §1.83(a).

Second, Figure 2 shows a vertical sectional view of a spindle motor for a disc drive incorporating the present invention. Figure 2 shows the present invention apart from the prior art design shown in Figure 1. The present invention involves the direct welding of the counterplate to an extension of the sleeve in which the counterplate is fit. The present invention cannot be shown in Figure 2 without the related components of a spindle motor. Rule 83(b) does not require one or more additional views when such views are not possible to exhibit. As such, Applicants contend that Figures 1 and 2 fully satisfy the requirements of 37 C.F.R. §1.83(b).

Therefore, Applicants respectfully request that the objections to the drawings be withdrawn.

II. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

The Examiner rejected claims 1-8 as being unpatentable over the Oku patent (United States patent 6,097,121, issued August 1, 2000) in view of the Moritan patent

RESPONSE
SN 09/489,293
PAGE - 4 of 7 -

(United States patent 5,822,846, issued October 20, 1998). The rejection is respectfully traversed.

More specifically, the Examiner conceded in paragraph 4 of the Final Office Action that Oku does not disclose a counterplate welded to the sleeve. The Examiner alleged, however, that Moritan discloses a "counter plate 22...welded to parts of the motor (column 2, lines 9-11). As such, the Examiner concluded that it would have been obvious to design a spindle motor as disclosed in Oku with the modification of welding the counter plate to the motor as disclosed by Moritan. Applicants respectfully disagree.

Oku teaches a spindle motor having an annular thrust plate (40, Figure 2) fixed to a lower end of a shaft (20) and accommodated in a thrust recess (34) of a sleeve (8). A disk-like thrust cover (42) is fitted to the sleeve (8). An annular groove (48) is formed in the sleeve in which an O-ring (50) is fitted for airtight sealing of the thrust cover to the sleeve. (See Oku, col. 3, line 66 through col. 4, line 19).

Moritan teaches a spindle motor having a shaft (12, Figure 1(a)-1(d)) borne in the radial direction by a sleeve (21) and in the thrust direction by a thrust plate (22). Lubricant is disposed between the shaft and the sleeve, and between the shaft and the thrust plate. The shaft bottom face (12b) and the thrust plate (22) constitute a thrust bearing. (See Moritan, col. 7, lines 36-58). The thrust plate is fixed to a bottom face of a housing (23a) by means of caulking or by press fitting. (Moritan, col. 8, lines 14-17).

The alleged references, either singly or in any permissible combination, do not teach, suggest, or otherwise render obvious the invention recited in independent claim 1. Namely, the alleged combination fails to teach or suggest a spindle motor having a counterplate welded to a sleeve and located adjacent a thrust plate. Applicants' amended claim 1 positively recites:

"A spindle motor for use in a disc drive comprising a shaft supporting a thrust plate at one end thereof,

a sleeve surrounding the shaft and adjacent the thrust plate and cooperating with the shaft to define a journal bearing and the thrust plate to define a fluid thrust bearing,

a counterplate welded to said sleeve and located adjacent said thrust plate,

the welded counterplate containing fluid within the thrust bearing and the journal bearing." (Emphasis added).

RESPONSE
SN 09/489,293
PAGE - 5 of 7 -

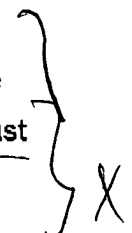
Independent claim 1 has been broadened by amendment to afford Applicants the proper scope of their invention. Independent claim 8 has been similarly amended. The deleted features from claims 1 and 8 are recited in newly added dependent claims 9 and 10, respectively.

In contrast to Applicants' invention, Oku is devoid of any teaching or suggestion of a counterplate welded to the sleeve of a spindle motor. Moritan is devoid of any discussion of a counterplate. In all the embodiments described in Moritan, a counterplate is never described or shown in the drawings. Since neither Oku nor Moritan teach or suggest a counterplate welded to a sleeve, no conceivable combination of Oku and Moritan teaches or suggests the invention of claim 1.

In paragraph 5 of the Final Office Action, the Examiner alleged that Moritan recites different methods of attaching a plate in a spindle motor, citing column 2, lines 5-11 therein. This, however, is a mischaracterization of the teachings of Moritan. The portion of Moritan cited by the Examiner reads as follows:

In order to correspond to this demand, in the fixing of the thrust plate to the motor, instead of height-taking configuration of screwing or bolt-fastening, more height saving configurations are usually adopted, for instance, caulking, pressing-in, bonding by adhesive or welding, or integration of the thrust plate with a sleeve metal of the bearing.

(Moritan, col. 2, lines 5-11) (Emphasis added). In the cited portion, Moritan discusses various methods for attaching a thrust plate to the motor, rather than just any plate. Contrary to the Examiner's assertion that a counterplate "seems to be like just another plate," those skilled in the art of spindle motor design clearly recognize a difference between a thrust plate and a counterplate. A thrust plate forms a thrust bearing between itself and the sleeve/shaft. A counterplate is adjacent the thrust plate and contains fluid within the thrust bearing and the journal bearing. Clearly the thrust plate and the counterplate perform different functions in the spindle motor. Welding a thrust plate to a motor fails to teach or suggest welding a counterplate to a sleeve in the motor.

A handwritten bracket on the right side of the text, grouping the last three sentences. Next to the bracket is a handwritten 'X'.

Therefore, Applicants contend that claim 1 is patentable over Oku in view of Moritan and, as such, fully satisfies the requirements of 35 U.S.C. §103. Independent

RESPONSE
SN 09/489,293
PAGE - 6 of 7 -

claim 8 recites relevant limitations similar to those recited in claim 1. Therefore, Applicants contend that claim 8 is also patentable over the cited references and, as such, fully satisfies the requirements of 35 U.S.C. §103.

Furthermore, claims 2-7 depend, either directly or indirectly, from claim 1 and recite additional features therefor. Since the alleged combination of Oku and Moritan fails to render obvious Applicants' invention as recited in claim 1, dependent claims 2-7 are also not obvious and are allowable.

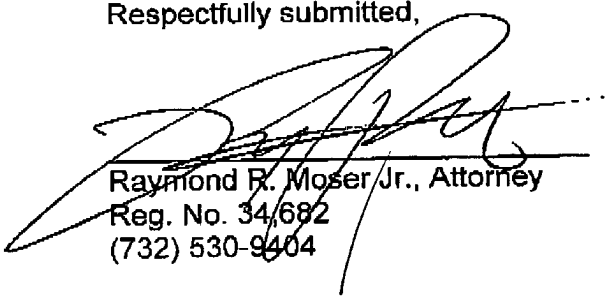
CONCLUSION

Thus, Applicants submit that none of the claims presently in the application are obvious under the provisions of 35 U.S.C. § 103. Consequently, Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of an adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. James A. Sheridan, Esq. at (650) 330-2310 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

8-30-02


Raymond R. Moser Jr., Attorney
Reg. No. 34,682
(732) 530-9404

Moser, Patterson & Sheridan, LLP
Attorneys at Law
595 Shrewsbury Avenue
Suite 100
Shrewsbury, NJ 07702

FAX COPY RECEIVED
AUG 30 2002
TECHNOLOGY CENTER 2800

RESPONSE
SN 09/489,293
PAGE - 7 of 7 -

APPENDIX I
MARKED-UP VERSION OF AMENDED CLAIMS

1. (Twice Amended) A spindle motor for use in a disc drive comprising a shaft supporting a thrust plate at one end thereof,
a sleeve surrounding the shaft and adjacent the thrust plate and cooperating with the shaft to define a journal bearing and the thrust plate to define a [first]fluid thrust bearing,
a counterplate welded to said sleeve and located adjacent said thrust plate[to define a second fluid dynamic thrust bearing],
the welded counterplate containing fluid within the thrust [bearings]bearing and the journal bearing.

8. (Amended) A spindle motor for use in a disc drive comprising a shaft supporting a thrust plate at one end thereof,
a sleeve surrounding the shaft and adjacent the thrust plate and cooperating with the shaft to define a journal bearing and the thrust plate to define a [first fluid]thrust bearing,
a counterplate supported between upraised axial arms of said sleeve and located adjacent said thrust plate[to define a second fluid dynamic thrust bearing],
means for containing fluid within the thrust [bearings]bearing and the journal bearing.